



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/677,038	09/30/2003	Michael Gordon	BWC-105US	7697
23122	7590	11/17/2004	EXAMINER	
RATNERPRESTIA			WALBERG, TERESA J	
P O BOX 980			ART UNIT	
VALLEY FORGE, PA 19482-0980			PAPER NUMBER	
			3742	

DATE MAILED: 11/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/677,038

Applicant(s)

GORDON ET AL.

Examiner

Teresa J. Walberg

Art Unit

3742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-42 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 11/17/03.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: ____.

DETAILED ACTION

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 8, 12, and 16 are rejected under 35 U.S.C. 102(e) as being anticipated by Michelfelder et al (6,789,615).

Michelfelder et al disclose a coiled heat exchanger (3) for use in a water heater (see abstract), the heat exchanger having a coiled tube (3) for directing the flow of fluid through the heat exchanger (see Fig. 1) the coiled tube having a tube outer diameter and a coil inner radius, wherein the ratio of said outer diameter of the tube to the coil inner radius is about 0.19:1 or greater for claim 8, 0.25:1 or greater for claim 12, or 0.3:1 or greater for claim 16. Note that while the exact dimensions of the tube and coil are not discussed, Fig. 1 shows the tube diameter that is well over 50% of the coil radius.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 9-11, 13-15, and 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Michelfelder et al (6,789,615).

Michelfelder et al disclose the claimed structure with the exception of the diameter measurements of the tube. However, a tube can be made in any desired diameter based on its intended use.

It would have been obvious to one of ordinary skill in the art to use any desired tube diameter based on the amount of fluid intended to be heated and the measurements of the other parts of the apparatus.

5. Claims 20-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Michelfelder et al (6,789,615) in view of Kim (6,098,705).

Michelfelder et al disclose the claimed structure with the exception of a support member contacting coils of the coiled tube to hold them in spaced positions and fastened to the coils by welding.

Kim discloses a support member which contacts coils to hold them in spaced positions and is fastened to the coils by welding.

It would have been obvious in view of Kim to provide coil supports welded to the coil of Michelfelder et al to better hold the coil in position.

6. Claims 1-5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Olson (1,921,259) in view of Hawkins (5,971,444).

Olson discloses a heat exchange assembly (see Fig. 2) adapted for use in a water tank (1), the heat exchange assembly comprising a tube (6) having end portions and a coiled portion (Fig. 2) between said end portions and a fitting (7, 14) connected to at least one of the end portions of said tube. Olson does not disclose the claimed structure of the fitting.

Hawkins discloses a fitting for connecting a pipe through a wall (see Fig. 3), with the fitting (12) having an end (24) configured to extend through an opening (42) in the wall (40) and a surface (22) positioned to limit the extension of said end through the opening in the wall, the fitting also having an opposite end defining a bore configured to receive one of the end portions of the tube (38) and to limit the extension of the end portion of the tube into the opposite end of the fitting, wherein said bore extends axially beyond said surface (see Fig. 3).

It would have been obvious in view of Hawkins to use such a fitting for the pipe connection of Olson to more easily and securely connect the pipe through wall of the water tank.

7. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Olson (1,921,259) in view of Hawkins (5,971,444) as applied to claims 1-5 and 7 above and further in view of Lane (1,062,015).

Olson in view of Hawkins disclose a heat exchange assembly having the structure claimed with the exception of an end of the fitting defining female threads:

Lane discloses a pipe coupling fitting having an end with female threads (7 in Fig. 2).

It would have been obvious in view of Lane to provide the heat exchange assembly of Olson in view of Hawkins with female threads on an end of the fitting to enable connecting the fitting to a pipe having male threads.

8. Claims 26, 27, and 37-40, are rejected under 35 U.S.C. 103(a) as being unpatentable over Olson (1,921,259) in view of Shepard et al (591,505).

Olson discloses a system for heating water (see Fig. 2) including a water storage tank (1) adapted to contain a water supply, at least one tube (6) connected to contain a recirculating water supply and being mounted within the water storage tank (1), the tube having at least one end portion fixed with respect to the water storage tank and a coiled portion (6) extending from said end portion, a fitting (7, 14) connected to said end portion of said tube and to said water storage tank, the fitting being oriented along a first direction and configured to reduce movement of the end portion of the tube with respect to the water storage tank along the first direction.

Olson does not disclose a reinforcement member coupled to the coiled portion of the tube and to the water tank to reduce movement of the coiled portion of the tube with respect to the tank along a second direction.

Shepard et al (see Figs. 1 and 2) disclose a reinforcement member coupled to the coiled portion (k) of a tube and to a water tank to reduce

movement of the coiled portion of the tube with respect to the tank along a second direction.

It would have been obvious in view of Shepard et al to provide a reinforcing member to support the heating coil of Olson, the motivation being to securely hold the coil in place.

9. Claims 28-32 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Olson (1,921,259) in view of Shepard et al (591,505) as applied to claims 26, 27, and 37-40 above and further in view of Hawkins (5,971,444).

Olson in view of Shepard et al disclose a system for heating water having the structure claimed with the exception of the structure of the fitting.

Hawkins discloses a fitting for connecting a pipe through a wall (see Fig. 3), with the fitting (12) having an end (24) configured to extend through an opening (42) in the wall (40) and a surface (22) positioned to limit the extension of said end through the opening in the wall, the fitting also having an opposite end defining a bore configured to receive one of the end portions of the tube (38) and to limit the extension of the end portion of the tube into the opposite end of the fitting, wherein said bore extends axially beyond said surface (see Fig. 3).

It would have been obvious in view of Hawkins to use such a fitting for the pipe connection of Olson in view of Shepard et al to more easily and securely connect the pipe through wall of the water tank.

Art Unit: 3742

10. Claims 35, 36, 41, and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Olson (1,921,259) in view of Shepard et al (591,505) as applied to claims 26, 27, and 37-40 above and further in view of Kim (6,098,705).

Olson in view of Shepard et al disclose a system for heating water having the structure claimed with the exception of the support member being fastened by welding.

Kim discloses a support member which contacts coils to hold them in spaced positions and is fastened to the coils by welding.

It would have been obvious in view of Kim to secure the coil supports of Olson in view of Shepard et al to more securely hold the coil and supports in position.

11. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Olson (1,921,259) in view of Shepard et al (591,505) and Kim (6,098,705) as applied to claims 35, 36, 41, and 42 above and further in view of Michelfelder et al (6,789,615).

Olson in view of Shepard et al and Kim disclose a system for heating water having the structure claimed with the exception of the ratio of the outer diameter of the tube to the coil inner radius being about 0.19:1 or greater.

Michelfelder et al discloses a water heating system wherein the ratio of the outer diameter of the tube to the coil inner radius being about 0.19:1 or greater.

It would have been obvious in view of Michelfelder et al to provide a ratio of the outer diameter of the tube to the coil inner radius of about 0.19:1 or greater

in the heating system of Olson in view of Shepard et al to enable greater heat transfer between the fluids.

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Baum, Newell, Mendelson, Van, Ullman, Blanding, Schulse, Moore, and are cited to show heat transfer coils used in fluid tanks.

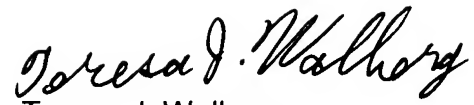
Budnick is cited to show a fitting for connecting tubes through a wall.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Teresa J. Walberg whose telephone number is 703-308-1327. The examiner can normally be reached on M-F 9:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robin Evans can be reached on 703-305-5766. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Art Unit: 3742

A handwritten signature in black ink, reading "Teresa J. Walberg". The signature is written in a cursive, flowing style.

Teresa J. Walberg
Primary Examiner
Art Unit 3742

tjw